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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/810,977

03/16/2001

Ronald N. Perry

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MITSUBISHI ELECTRIC INFORMATION
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EXAMINER

WALLACE, SCOTT A

ART UNIT

PAPER NUMBER

2671

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,977

Applicant(s)

PERRY ET AL.

Examiner

Scott Wallace

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware ACM 2001 1-5813-292-1/01/01.

2. As per claim 1, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware discloses generating a first adaptively sampled distance field for a first model (pg 145 column 2, 3rd paragraph); generating a second adaptively sampled distance field for a second model (pg 145 column 2, 3rd paragraph); sampling locations in the first adaptively sampled distance field to determine a distance value for each location (pg 146, 1st column, 1st paragraph); sampling the second adaptively sampled distance field at each location to determine a corresponding feature of the second adaptively sampled distance field for each location (pg 146, 1st column, 1st paragraph); modifying each distance value according to the corresponding feature to determine a second distance value for each location (pg 145, column 2, 3rd paragraph and pg 146, 1st column, 1st paragraph).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware in view of Rockwood et al., U.S. Patent No. 5,251,160.

4. As per claim 2, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware does not disclose generating a third adaptively sampled distance field from the modified distance values.

However, Fast and simple 2D Geometric Proximity Queries Using Graphics does disclose finding the distance values of objects. The applicants discloses in the specification that this third value is from blending two models together. Rockwood et al discloses blending two models together in column 2 lines 8-27. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine two models together as in Rockwood with the system of Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware because this provided a smoother transition surface (column 1 lines 13-15).

5. As per claim 3, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware discloses rendering the third adaptively sampled distance field (pg 145, column 2, paragraph 3 and 4).

6. As per claim 4, Rockwood discloses combining the first distance value with the distance value of the second adaptively sampled distance field to determine the third distance value (column 2 lines 8-27). The combining of the models would also combine the distance values.

7. As per claim 5, Rockwood discloses wherein the combining is according to a blending function to blend the first and second models (column 2 lines 8-27).

8. As per claim 6, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware discloses wherein the plurality of models have more than two dimensions (pg 145, column 2, 4th paragraph).

9. As per claim 7, Fast and simple 2D Geometric Proximity Queries Using Graphics hardware does not specifically disclose wherein at least one model is a two-dimensional glyph. However, this would have been obvious to one of ordinary skill in the art because Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware doesn't limit what type of model is used, therefore any model will work.

10. As per claim 9, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware discloses wherein at least one model is a hyper-dimensional physical system model (pg 145, column 2, 3rd paragraph).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware in view of Lindbloom, U.S. Patent No. 5,740,076.

12. As per claim 8, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware does not specifically disclose wherein at least one model is a four-dimensional color gamut. However, Lindbloom discloses this in column 2 lines 55-57. It would have been obvious to one of ordinary skill in the art to use the color gamut as a model in the system of Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware because this would produce accurate identification of colors (column 2 lines 47-50).

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware in view of Pfister et al., U.S. Patent No. 6,480,190 B1.

14. As per claim 10, Fast and simple 2D Geometric Proximity Queries Using Graphics Hardware does not specifically disclose wherein the generating comprises defining a candidate cell of the adaptively sampled distance field, determining and storing distance values of the candidate cell in a bounded distance tree, recursively subdividing the candidate cell into subdivided cells of the adaptively sampled distance field while determining and storing corresponding distance values of the subdivided cells in the bounded distance tree until a termination condition is reached, and appending the distance values to the corresponding cells to generate the adaptively sampled distance field of the object. However, Pfister discloses using a recursively subdividing cell in column 5 lines 35-52. It would have been obvious to one of ordinary skill in the art at the time the invention was made because deformation of objects becomes easier and frequent resampling is not needed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

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Art Unit: 2671

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,
Mark Zimmerman, can be reached at 703-305-9798.

Any response to this action should be mailed to:

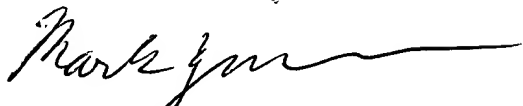
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be
directed to the Technology Center 2600 Customer Service Office whose telephone number is
(703) 306-0377.


MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600